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New records and checklist of corticioid *Basidiomycota* from Uruguay

Sebastián Martínez[1] & Karen K. Nakasone[2]

[1]*sebamart@fing.edu.uy*
Laboratorio de Micología Facultad de Ingeniería/ Ciencias,
J. Herrera y Reissig 565, C. P. 11300 Montevideo, Uruguay

[2] *Center for Forest Mycology Research, Northern Research Station, US Forest Service,*
One Gifford Pinchot Drive, Madison, Wisconsin,USA 53726–2398

Abstract — Twenty-eight corticioid basidiomycete species are reported from Uruguay for the first time. An annotated checklist with 110 species of corticioid *Basidiomycota* recorded from Uruguay is presented based on these new records and an intensive literature search. These species are distributed in 49 genera and 10 orders. The order *Polyporales* is represented by the most species (40) and the genus *Phanerochaete* has the most species (11). *Hjortstamia fuscomarginata, Hyphoderma rimosum, Phlebia lividina,* and *P. subserialis* are recorded for the first time from South America. For the complete checklist see http://www.mycotaxon.com/resources/weblists.html.

Key words — biodiversity, *Homobasidiomycetes*, taxonomy, wood-rot

Introduction

Uruguay is located in southeast South America between 30° and 35°S and 53.5° and 58.5°W, covering around 178,000 km². The mean temperature is 17.5°C varying from 16°C in the southeastern Atlantic coast to 19°C in the northwest. The mean annual precipitation is 1300 mm, ranging from 1100 mm in southern Uruguay to 1600 mm in the north (Dirección Nacional de Meteorología 2009). The climate in Uruguay is rainy, without a dry season, but with a wide annual variation in precipitation. The Uruguayan climate is temperate and wet (type "C") with precipitation throughout the year (type "f"); in the hottest month the temperature is over 22°C (type "a") (Dirección Nacional de Meteorología 2009). These characteristics correspond with the Cfa climate type of the Köppen-Geiger classification (Peel et al. 2007).

In Uruguay, 7% is forested and 80% is grasslands (Carrere 2001). About 750000 ha are covered by native forests and an additional 670,000 ha consist

of nonnative forests of mostly *Eucalyptus* and *Pinus* species for the pulp and sawmill industries (Anon. 2005). The native vascular flora of Uruguay consists of approximately 2500 to 2750 species (Marchesi 2005, Alonso-Paz & Bassagoda 2002) including 302 indigenous tree and shrub species (Brussa & Grela 2007). According to Alonso-Paz & Bassagoda (2002), the Uruguayan vascular flora is composed of 150 families and 859 genera, which is high if measured by unit area. The families with the highest number of species are *Asteraceae*, *Poaceae*, *Fabaceae*, *Cyperaceae,* and *Euphorbiaceae* (Marchesi 2005, Alonso-Paz & Bassagoda 2002). This diversity of woody native and introduced plant species suggest a corresponding high level of fungal diversity.

The corticioid Basidiomycetes of Uruguay are poorly known. Felippone (1928) was the first to record corticioid species from Uruguay. He recorded four species of *Thelephora* and eight in *Stereum*. Herter (1933) reported six species of *Thelephoraceae,* including one species of *Hymenochaete* and two species in *Irpex* and *Merulius.* Koch et al. (1981) recorded eight species in the genera *Corticium*, *Stereum* and *Thelephora*, as related to plant pathology. In a series of papers, Gazzano (1987, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2001, 2002, 2007) reported on various polyporoid and corticioid species from Uruguay, including many new records. In total, there are about 70 species of corticioid fungi reported from various sources. Recent collections from throughout Uruguay on native and exotic trees yielded new records of corticioid basidiomycetes. In this study, we report an additional 28 new records of corticioid species. The aim of the present work is to establish a baseline of knowledge of the diversity of corticioid basidiomycetes in Uruguay by providing a checklist of the recorded species.

Materials and methods

The checklist is based on data obtained from an intensive search of literature records of corticioid fungi from Uruguay. Genera and species are listed alphabetically within each accepted order according with the proposed nomenclature of Hibbett et al. (2007) and Larsson (2007). Data on substrate and nutritional strategies are provided for each species. The new species records in this study were collected in native and nonnative, planted forests, urban areas, or retrieved from the herbarium of the Facultad de Ciencias, Montevideo, Uruguay (MVHC). Microscopic examinations were made from freehand sections mounted in 5% aqueous KOH and 1% aqueous phloxine solutions, 5% cotton blue in 25% lactophenol, and Melzer´s reagent (Kirk et al. 2008). Specimens were deposited at MVHC. Author abbreviations follow Kirk & Ansell (1992). Cortbase version 2.1 (Parmasto et al. 2004) and Index Fungorum (www.indexfungorum.org) were consulted for current names of species and synonyms.

Results

The corticioid basidiomycetes of Uruguay consist of 110 recorded species, including the present additions. Ninety-nine species are here taxonomically or nomenclaturally accepted and eleven are listed as doubtful. These are distributed in 10 orders according with the modern classification based on molecular studies (Hibbett et al. 2007, Larsson 2007). Among them, only three species belonging to the *Boletales* are brown-rot decay fungi. The orders with the highest number of species present in Uruguay are *Polyporales* (40 species), *Hymenochaetales* (25 species), and *Russulales* (16 species). The remaining seven orders are represented by five or fewer species. The genera with the highest number of recorded species are *Phanerochaete* (11 species), *Phlebia* (8 species) and *Hyphodontia* (7 species) from a total of 49 genera represented in the Uruguayan checklist. *Hjortstamia fuscomarginata* (Burt) Hjortstam & Ryvarden, *Hyphoderma rimosum* Burds. & Nakasone, *Phlebia lividina* Hjortstam and *P. subserialis* (Bourdot & Galzin) Donk are recorded for the first time from South America. For the complete checklist see http://www.mycotaxon.com/resources/weblists.html.

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